ABSTRACT

Instead of storing a previous version of file, a backup technique stores a transformation operator which reflects the differences between a previous version of a file and a subsequent version. The operator may include the difference between a numerical value in the previous file version and the corresponding value in a subsequent version. Further, the transformation operator may indicate textual or binary changes between the file versions. To recover the previous version, the transformation operator is applied to the newer version to regenerate the previous version. If desired, multiple transformation operators can be maintained for a given file to be able to regenerate more than just the immediately preceding version of the file, thereby creating a multi-level backup system. The transformation operators preferably are stored in a RAID-type storage system for fault tolerance.